3. Extract of muscaria paralyzes the cardiac muscular substance and probably the excito-motory apparatus.

4. In part at least, atropia antagonizes the action of muscarin by possessing for the cardiac structures (excito-motory apparatus and cardiac muscle) a stronger affinity than muscarin, whereby atropia, a cardiac paralyzer, replaces muscarin, also a cardiac paralyzer: but atropia has a far weaker paralyzing action than muscarin; hence when atropia replaces muscarin in the cardiac structures, the powerful paralyzing effect of muscarin is replaced by the far weaker paralyzing effect of atropia, and so a heart weakened or arrested by muscarin becomes strengthened, or commences beating again on the addition of atropia.

5. Pilocarpine, which weakens or arrests the heart, also antagonizes the action of muscarin, which still more powerfully paralyzes the heart. We suggest the same explanation for this antagonism as for the antagonism of atropia for muscarin, namely, that it is due to chemical displacement. Pilocarpine having a stronger affinity for the excito-motory apparatus and for the muscular substance, displaces muscarin and substitutes its own weaker paralyzing action for that of muscarin.

6. Our experiments do not show that the antagonism between atropia and muscarin is not in part due to their antagonism on the inhibitory apparatus. In which case atropia, having a strong chemical affinity for the structures of inhibitory apparatus, displaces muscarin and substitutes its paralyzing action for the stimulant action of muscarin.

Effects of Long-continued Use of Chloral.

At a recent meeting of the Clinical Society of London, Dr. FARQUHARSON presented the Report of the Committee appointed to ascertain what deleterious effects follow the prolonged and continued use of chloral in ordinary doses. It is stated that seventy special replies and three printed papers had been received in reply to nearly 1000 circulars distributed throughout the profession, followed a few months later by a second appeal, made public through the freely accorded medium of the medical press. Twenty-nine answers state that, after extensive experience of chloral in long-continued doses, no ill effects have been observed. Ten of these correspondents enjoy the special opportunities for observation afforded by asylum practice, and Mr. Curgenven, Dr. C. T. Williams, Dr. W. Squire, Dr. Buzzard, Dr. Clifford Allbutt, and others, furnish cases in which chloral had been regularly and beneficially taken for periods varying from two to ten years.

Before proceeding to analyze the replies received from those who had observed inconvenient effects to follow the use of chloral, the committee drew up a brief summary of what has already been recorded on the subject. Their special information has been arranged under the various headings of the schedule, thus :—*A. Nervous System.* Fourteen answers record cases in which nervous debility, mental enfeeblement, and convulsive seizures appeared to follow the use of chloral, Dr. Maudsley, Dr. Clouston, and Dr. Lindsay expressing themselves as strongly opposed to its employment in insanity.—*B. Circulatory System.* Two answers under this heading note some cardiac enfeeblement.—*C. Digestive System.* Six replies mention digestive disturbance as occasionally following the administration of alcohol.—*D. Cutaneous.* Nine correspondents give details of cases in which they observed itching of the skin, lichenous eruption, with deep flushing of face and head, following the taking of stimulants.—*E.* Two replies indicate the possibility of urinary irritation being produced by chloral.—Inquiry amongst some of the leading druggists of the metropolis has not established the probability that there is any remarkable abuse by the public of the facilities which they enjoy of purchasing for themselves any quantity of chloral. The drug, it may be mentioned, is not included by the Legislature amongst those the sale of which is guarded by the name and address of the purchaser being required to be registered by the vendor. In conclusion, the committee expressed regret that, in spite of repeated appeals to individuals generally and to the profession by circular, and through the medical press, they have failed to obtain any more definite information than that contained in the preceding report; and, although the opinions expressed by numerous gentlemen of experience will, doubtless, be received with the respect which is their due, the committee would have been glad if more facts, from which definite conclusions might have been drawn, had been placed at their disposal.—*Lancet*, Jan. 17, 1880.

Duboisia and its Therapeutic Use.

A slight degree of poisoning by duboisia produces in man the following phenomena: Dryness of the mouth and throat, dilatation of the pupil and accompanying it dimness of vision; when in a more advanced stage it is accompanied by cephalalgia, vertigo, and drowsiness, which may even deepen into a comatose stupor. The pulse is considerably quickened, it may range from 66 to 180 (Ringer). The skin is covered with a scarlatiniform eruption. Sometimes an extraordinary lassitude may be observed, an uncertainty in talking, and delirium.

In the experiments undertaken by M. FAUQUÉ (*Thèse de Paris*, 1879) a noticeable quickening of respiration was noted in animals, which was not observed with atropia. The central *nervous system* is then acted upon: thence come delirium and stupor. In the case of animals subjected to subcutaneous injections of duboisia a marked weakening of the excito-motor power follows. This weakness continues as long as access of blood to the member, which is being studied, is prevented. In exceptional cases tetaniform convulsions have been observed.

The action on the circulatory apparatus is shown by the acceleration of the heart-beat, but this is not observed in frogs. In these animals, contrary to what is produced in the case of dogs, there is a diminution in the heart-beat.

The secretion of sweat and saliva is considerably diminished. From this results the great dryness of the mouth and throat, observed in men and animals. There should be, according to M. Fauqué, a paralyzing action on the excito-sudoral nervous fibres, admitted by M. Vulpian.

Finally duboisia causes dilatation of the iris, and paralysis of accommodation, and seems to act by direct paralysis of the motor nerve-filaments of the ciliary muscles and iris. Besides, the action on the iris and the ciliary muscle is exercised independently; the iris remains paralyzed longer than the muscle of accommodation. Duboisia differs from atropia by the persistence and greater rapidity of its action on the muscle of accommodation.

Duboisia is indicated in all cases in which atropia acts badly. However, in two cases of iritis reported by Galezowski it has caused as much irritation as atropia.

M. Gubler has used it for the sweats of phthisis in the dose of 1 milligramme by injection. He has employed it in the same proportion to raise the number of pulsations, which had fallen to 40 in the case of a tuberculous patient, and as a calmative in a case of maniacal delirium. The hypodermic injection (1 part to 200) at the rate of two drops a day at the beginning is the most convenient mode of employment as a collyrium intended to cause mydriasis. M. Galezowski gives from 0.02 gramme to 0.10 gramme in 10 grammes of water at the rate of three to five drops a day. In cases of inflammation of the cornea from foreign bodies the